

CLAIMS

1. A method of cutting foils comprising a carrier film and a decorative layer disposed thereon and including at least one lacquer layer; in particular stamping foils, characterised in that firstly the decorative layer (5) is removed from the carrier film (4) by means of laser radiation (12) along the cut line (13) and then in the removal track (13) formed in that way the carrier film (4) is mechanically separated by means of a blade (3).
2. A method according to claim 1 characterised in that a removal track (13) is formed, whose width (b) is wider than the thickness (d) of the blade (3) for cutting the carrier film (4).
3. A method according to claim 1 and claim 2 characterised in that a removal track (13) of between 1 and 3 mm in width is formed.
4. A method according to one of the preceding claims characterised in that an Nd:YAG- or diode laser (11) is used for removal of the decorative layer (5).
5. A method according to claim 4 characterised in that a laser (11) with a power of between 20 and 50 W is used.
6. A method according to one of the preceding claims characterised in that a laser (11) is used, which has a laser radiation (12) intensity distribution transversely with respect to the direction of advance movement of the foil (relative to the laser beam (12)), which corresponds to a rectangular (top hat) profile (Figure 3).
7. A method according to one of the preceding claims characterised in that the carrier film (4) subsequently to removal of the decorative layer (5) is severed by means of the blade (3) at a spacing of less than 70 mm, preferably less than 50 mm.

8. A method according to one of the preceding claims characterised in that operation is effected with cutting speeds of at least 40 m/min, preferably at least 70 m/min.

9. Apparatus for carrying out the cutting method according to one of the preceding claims comprising a laser (11) producing a removal laser beam (12) and a cutting blade (3), wherein both the laser beam (12) and also the cutting blade (3) act at a spacing from each other in the cutting direction on the substrate (4, 5) to be cut, characterised in that the laser (11) and the cutting blade (3) are of such an arrangement and configuration that the cutting blade (3) is arranged following the location of action (16) of the laser beam (12) in the direction of movement (10) of the foil (1) forming the substrate, wherein the laser beam (12) produces in the decorative layer (5) a removal track (13) which is wider than the thickness (d) of the cutting edge, which acts on the foil (1), of the cutting blade (3).

10. Apparatus according to claim 9 characterised in that the laser (11) is provided with a device for deflection of the laser beam (12).

11. Apparatus according to claim 9 or claim 10 characterised in that the laser (11) has a device for varying the diameter of the laser beam (12) which acts on the foil (1).

12. Apparatus according to one of claims 9 to 11 characterised in that the power of the laser (11) is regulatable in dependence on the speed of movement of the foil (1).

13. Apparatus according to one of claims 9 to 12 characterised in that the spacing between the locations of action (16) of the laser beam (12) on the one hand and the cutting blade (3) on the other hand on the foil (1) is less than 70 mm, preferably less than 50 mm.

14. Apparatus according to one of claims 9 to 13 characterised in that the laser beam (12) and the cutting blade (3) are arranged on the same side of the foil (1) to be cut.

002260-11651960